16 April 2004

World Intellectual Property Organization
PCT Administration Division
34 Chemin des Colombettes
1211 GENEVA 20
SWITZERLAND

"Amendment of the Claim under Article 19(1) (Rule 46)"

Re: International Application No. PCT/JP2003/016640
Applicant: JSR CORPORATION et al
Agent: WAKI Misao
International Filling Date: 24 December 2003

Dear Sir.

The applicant, who received the International Search Report relating the above-identified International Application transmitted on 5 March 2004, hereby files amendment under Article 19(1) as in the attached sheets.

Further, the applicant hereby does not cancel any sheets. Thus claim 1 is amended, claims 2-5 are retained unchanged, claim 6 is cancelled, and claim 7 to claim 10 are retained unchanged with the exception of renumbering claim Numbers.

The applicant also files as attached herewith a brief statement explaining the amendment and indicating any impact that amendment therein might have on the description.

Very truly yours,

WAKI Misao

Attachment:

(1) Amendment under Article 19(1) 1 sheet

(2) Brief statement 1 sheet

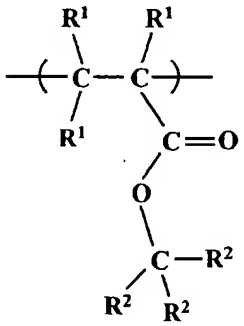
CLAIMS

1. A radiation-sensitive resin composition comprising

an acid-labile group-containing resin which is insoluble or scarcely soluble in alkali, but becomes alkali soluble by the action of an acid, and

a photoacid generator,

wherein the acid-labile group-containing resin comprises a recurring unit of the following formula (1) and has a ratio of a weight average molecular weight to a number average molecular weight (weight average molecular weight/number average molecular weight) of smaller than 1.5 and is polymerized with a living radical polymerization initiator,

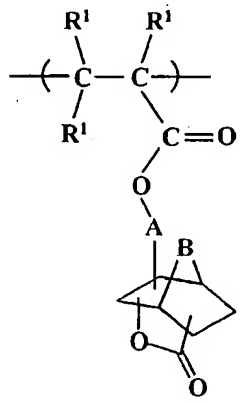


(1)

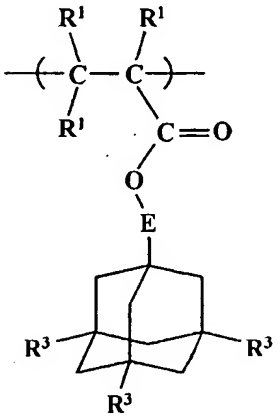
wherein R^1 individually represents a hydrogen atom, methyl group, trifluoromethyl group, or hydroxymethyl group and R^2 individually represents a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, or a linear or branched alkyl group having 1-4 carbon atoms, in which at least one of R^2 groups is a monovalent alicyclic hydrocarbon group or a derivative thereof, or any two of R^2 groups form a divalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof in combination with the carbon atom to which the two R^2 groups bond, with the remaining R^2 group being a linear or branched alkyl group having 1-4 carbon atoms or a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative

thereof.

2. The radiation-sensitive resin composition of claim 1, wherein the acid-labile group-containing resin comprises a recurring unit of the formula (1) and at least one recurring unit selected from the group consisting of the recurring units of the following formulas (2)-(7),



(2)



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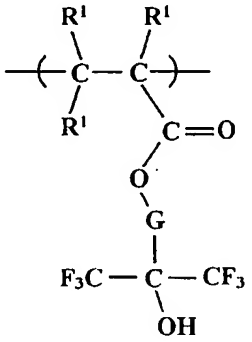

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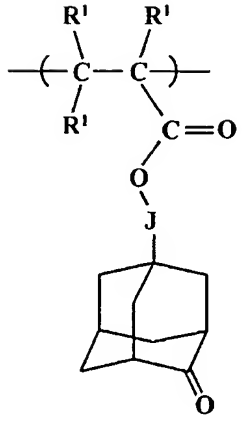
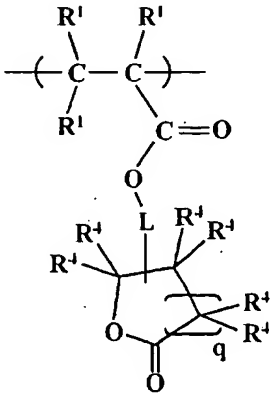


(5)



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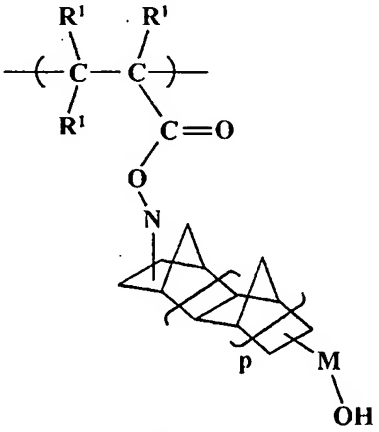


(7)

wherein R^1 individually represents a hydrogen atom, methyl group, trifluoromethyl group, or hydroxymethyl group, A represents a single bond, a substituted or unsubstituted, linear or branched alkylene group having 1-6 carbon atoms, a mono- or dialkylene glycol group, or an alkylene ester group, B represents a single bond, a substituted or unsubstituted alkylene group having 1-3 carbon atoms, an alkyloxy group, or an oxygen atom, E

represents a single bond or a divalent alkyl group having 1-3 carbon atoms, R^3 individually represents a hydroxyl group, cyano group, carboxyl group, $-COOR^5$, or $-Y-R^6$, wherein R^5 represents a hydrogen atom, a linear or a branched alkyl group having 1-4 carbon atoms, or an alicyclic alkyl group having 3-20 carbon atoms, Y individually represents a single bond or a divalent alkylene group having 1-3 carbon atoms, R^6 individually represents a hydrogen atom, hydroxyl group, cyano group, or $-COOR^7$, provided that at least one R^3 group is not a hydrogen atom, R^7 represents a hydrogen atom, a linear or branched alkyl group having 1-4 carbon atoms, or an alicyclic alkyl group having 3-20 carbon atoms, G represents a single bond, a linear or branched alkylene group having 1-6 carbon atoms, an alicyclic hydrocarbon group having 4-20 carbon atoms, an alkylene glycol group, or an alkylene ester group, J, L, N, and M individually represent a single bond, a substituted or unsubstituted, linear, branched, or cyclic alkylene group having 1-20 carbon atoms, an alkylene glycol group, or an alkylene ester group, p is 0 or 1, R^4 represents a hydrogen atom, a linear or branched alkyl group having 1-4 carbon atoms, an alkoxy group, a hydroxyalkyl group, or a divalent alicyclic hydrocarbon group having 3-20 carbon atoms or a derivative thereof, and q is 1 or 2.

3. The radiation-sensitive resin composition of claim 2, wherein the acid-labile group-containing resin comprises the recurring unit of the formula (2), at least one of the recurring units of the formula (2) to (7).

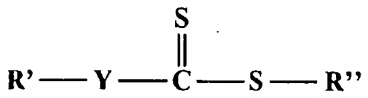
4. The radiation-sensitive resin composition according to either claim 2 or claim 3, wherein the content of the recurring unit (1) is 15-70 mol% of the total amount of the recurring units.

5. The radiation-sensitive resin composition according to claim 4, wherein the acid-labile group-containing resin is a polymer produced by random polymerization of

the recurring units which form the resin.

6. The radiation-sensitive resin composition according to claim 1, wherein the living radical polymerization initiator is a mixture of a transition metal complex, an organic halide, and a Lewis acid or an amine.

7. The radiation-sensitive resin composition according to claim 1, wherein the living radical polymerization initiator is a compound of the following formula (8),



(8)

wherein R' represents an alkyl group or an aryl group having 1-15 carbon atoms which may contain an ester group, ether group, amino group, or amide group; Y represents a single bond, oxygen atom, nitrogen atom, or sulfur atom; and R" represents an alkyl group or an aryl group having 1-15 carbon atoms which may contain an ester group, ether group, or amino group.

8. The radiation-sensitive resin composition according to either claim 6 or claim 7, wherein terminal processing of the living radical polymerization initiator is conducted using a heat radical generator.

9. The radiation-sensitive resin composition according to claim 1, wherein the photoacid generator comprises at least one compound selected from the group consisting of a triphenylsulfonium salt compound, a 4-cyclohexylphenyldiphenylsulfonium salt compound, a 4-t-butylphenyldiphenylsulfonium salt compound, and a tri(4-t-butylphenyl)sulfonium salt compound.

10. The radiation-sensitive resin composition according to claim 1, further comprising a nitrogen-containing organic compound as an acid diffusion controller.